

EFFICIENCY Customer Newsletter

APRIL 2008, VOLUME 12, ISSUE 3

USDA Rural Development Grant Funds Available

The U.S. Department of Agriculture Rural Development (RD) has issued a request for applications under the Section 9006 (§9006) program. The §9006 program offers grants and/or loan guarantees for the purchase and installation of renewable energy generation and energy efficiency improvements.

- Assistance is limited to small businesses and farmers and ranchers.
- Projects must be located in a rural area.
- The §9006 grants and guarantees may be used individually or in combination to finance up to 50 percent of a project's cost.

Detailed information on the §9006 program and how to apply is available on RD-Oregon's Web site at: www.rurdev.usda.gov/or/energy.htm

Over \$15.8 million of grant funds will be awarded via a national competition. Last year, Oregon

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April 2008 CRC/CAA Implementation Manual Available

The April 2008 Conservation Rate Credit (CRC) and Conservation Acquisition Agreement (CAA) Implementation Manual update is available online at <http://www.bpa.gov/Energy/N/projects/post2006conservation/>.

Also, a link has been added from that page to climate zone maps on the Regional Technical Forum Web site.

Northwest Energy Efficiency Task Force

Planning continues for a regional effort to examine current energy efficiency practices and programs to determine strategies for enhancing program effectiveness.

This regional effort will convene within the next two months and be led by an executive steering group of senior executives from a variety of industries. With the increased emphasis on energy efficiency driven by increased energy prices, climate concerns, etc., this regional effort is timely to ensure the region is coordinating efforts to maximize the penetration of energy efficiency programs while holding down program costs.

For information about the Northwest Energy Efficiency Task Force, contact Darby Collins of BPA at (503) 230-3811 or via e-mail to dacollins@bpa.gov.

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• 2008 Utility Energy Efficiency Workshop



NW Trade Ally Network Continues to Grow



Roger Spring Director of the NW Trade Ally Network welcomes vendors and utilities to a NWTAN event in Tacoma.

The new Northwest Trade Ally Network – Commercial & Industrial Lighting (NWTAN) is an effort sponsored by BPA to support utilities and trade allies including lighting contractors, electrical distributors and suppliers and manufacturers, to increase the number of completed energy efficient lighting projects.

A series of workshops have been held over the past four months including sessions Eugene, Portland, Puget Sound, Pasco, Spokane and Kalispell. These events have been well attended by both utilities and trade allies interested in hearing about the latest concerning lighting & controls technologies, applications, and best-practices. Information about the NWTAN and how to join along with updates on the latest program offerings from utilities was shared at the events.

According to Brent Barclay, NWTAN Manager, "The response from utilities and trade allies has been tremendous. The fact that over 500 people took the time to attend these workshops shows there is a real interest in learning how they can work together to make commercial and industrial lighting become bigger part of their businesses."

Approximately 90 utilities have elected to promote their programs through NWTAN, while over 150 companies have applied to become participants.

For more information visit www.northwest-lighting.org or speak to your BPA Energy Efficiency Representative.

-- Lisa Perigo (503) 230-3059
(Submitted by Brent Barclay, NWTAN)

Consumers Power Involved in Corvallis Energy Challenge

Consumers Power (CPI), Philomath, Oregon, and Pacific Power are participating in the Energy Trust of Oregon (ETO) year-long campaign to help Corvallis residents and businesses boost energy efficiency and lower energy costs. Both utilities serve Corvallis. ETO provides rebates for Oregon's investor-owned utilities – Pacific Power, Portland General Electric and Northwest Natural Gas.



More than 80 organizations in the Corvallis Sustainability Coalition received a challenge to sign up for home energy reviews and to encourage others to do the same.

The goal is to have 1,000 Corvallis homeowners enrolled by April 22.

CPI will also participate with homes served by Northwest Natural Gas in its Corvallis service area by providing free energy efficient light bulbs.

-- Margaret Lewis (503) 230-7552
(Submitted by Lonnie Plumley, CPI Marketing Representative)



USDA Rural Development Grant Funds Available

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energy projects received over \$1.6 million from this program. The Federal Register notice inviting applications can be found online at: http://www.access.gpo.gov/su_docs/fedreg/a080306c.html (select the notice under "Rural Business-Cooperative Service").

There will be two rounds of \$9006 grant competition in 2008. The first-round application deadline is April 15; the second is June 16. Awards should be announced in June for the first round and September for the second round. Loan guarantees are also available from RD for the \$9006 program on an over-the-counter basis provided applications are submitted by June 16.

For further information about this solicitation, please contact the applicable state office:

- California: Charles Clendenin, USDA Rural Development, 430 G Street, AGCY 4169, Davis, CA 95616, (530) 792-5825
- Idaho: Brian Buch, USDA Rural Development, 725 Jensen Grove Drive, Suite 1, Blackfoot, ID 83221, (208) 785-5840, Ext. 118
- Montana: John Guthmiller, USDA Rural Development, 900 Technology Blvd., Unit 1, Suite B, P.O. Box 850, Bozeman, MT 59771, (406) 585-2540
- Nevada: Herb Shedd, USDA Rural Development, 1390 South Curry Street, Carson City, NV 89703, (775) 887-1222

-- Brad Miller (503) 230-3764

KidWind Project

The KidWind Project is a team of teachers, students, engineers and practitioners exploring the science behind wind energy in classrooms in the nation. Improving science education is their main goal. They want schools to become important wind energy resources for students and the general public.

For more information, visit the project Web site at <http://www.kidwind.org/>.



Photo by Tom Osborn, BPA

Fall Change-A-Light Twist Promotion

The Fall Change-A-Light Twist promotion moved more than 2,200,000 compact fluorescent lights (CFLs) from September 1 through March 1. The promotion was a regional buy-down offer through BPA that was implemented by Fluid Market Strategies. Fifty-four utilities and 19 retail chains participated, representing 1,035 stores in Idaho, Montana, Oregon and Washington. Retail chains included are: Ace Hardware, Albertsons, Associated Grocers, Bi-Mart, Fred Meyer, Grover Electric and Plumbing, High-School Pharmacy, Rite-Aid, True Value, Wal-Mart and many other local stores.

A robust marketing campaign created consumer awareness about the utility discounted ENERGY STAR® CFLs. Across four states there were 220 print advertisements in major media publications, over 300 online banners, over 500 advertisements and radio public service announcements. Store displays said, "Brought to you buy your local utility," and were often customized with utility

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EnergySmart [Grocer] Update



Poor energy practices found during grocery store audits include strip curtains cut-off, pulled up, or wrapped around shelves in walk-ins

Since the start of the EnergySmart [Grocer] Program almost a year ago, more than 70 utilities have enrolled, including the recent addition of all three Puget Sound area utilities. To date, the EnergySmart Program has

- Saved over 5 million kWh
- Completed 625 audits and revisits
- Installed CFLs and Cooler Misers at 173 different grocery stores and provided door gasket/auto-closer replacements on over 200 stores

The program begins with a no-cost energy audit available to grocery stores, convenience stores, restaurants and other businesses with commercial refrigeration. During this audit a trained Field Energy Analyst recommends multiple ways the business can improve energy efficiency and receive program incentives to assist with first costs. These analysts also work with customers to identify poor practices and recommend changes to help save energy. Some poor energy practices recently found on audits include:

- Strip curtains cut-off, pulled up, or wrapped around shelves in walk-ins
- Walk-in freezer/cooler doors strapped permanently open

- Hot wood burning stoves located between cooler/freezer cases
- Torn gaskets on doors of reach-in cases

Field Energy Analyst's work with store owners to communicate the importance of managing energy. If the owner requests energy efficiency upgrades the program will suggest simple no-cost installations such as CFLs, cooler-misers, and door gaskets. Suggestions may also include higher cost retrofit's such as efficient motors, night covers and energy efficient cases. EnergySmart's Field Analyst's have been very successful at influencing store owners to take action.

-- Gary Smith (503) 230-3608

(Article submitted by Steve Cofer, PECl)

Building Simulation Users' Group

The Building Simulation Users' Group (BSUG) is a group of engineers, architects, analysts and contractors who have an impact on the adoption of energy efficiency in new commercial buildings.

At a time when green building practices are changing how the world thinks about design and construction, the group seeks to make participants more effective as building modelers and raise the quality of building analysis and design in the Pacific Northwest. BSUG members work to promote early interaction and collaboration between designers and energy modelers and provide a forum for ideas on energy-related design and building simulation. Founding member Earl Johnson of PMConsulting said, "BSUG members share ideas to improve a building's energy efficiency performance through systems modeling. "That's our purpose – an exchange of ideas."

Monthly meetings are held on the third Wednesday at NW Natural's headquarters in Portland, Ore. Members outside of the metro area can participate via the Internet. During the 90-minute meetings, members share ideas and techniques to improve

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BSUG

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the quality of building energy modeling. Typically, 40 to 60 engineers, architects, analysts and contractors participate.

As a national leader in green building, Oregon has a wealth of talented building professionals and many are members of BSUG.

Andy Frichtl of Interface Engineering led the March 2008 meeting to discuss Oregon Health & Science University's Center for Health and Healing successful effort to receive a Leadership in Energy and Environmental Design (LEED®) Platinum rating from the U.S. Green Building Council (USGBC). The Center exceeded Oregon and LEED energy efficiency standards by 61 percent. A comprehensive modeling of the available choices in various combinations, along with an economic assessment of the savings and first costs led to many innovative energy-saving solutions. Frichtl credits the early collaboration of energy analysts and designers with the project's success.

BSUG is supported by several entities:

- Energy Trust of Oregon's New Buildings program provides funding and the Web sign-in page
- NW Natural provides meeting space, audio/visual support and remote meeting capability



Attendees at the March 2008 meeting of BSUG.

Building Simulation Users' Group Event

Modeling of Ground Source Heat Pumps

Wednesday, April 16, 12 - 1:30 p.m.

Speaker: Xiaobing Liu of ClimateMaster

NW Natural Headquarters, 220 NW 2nd Ave., Portland

For more information, visit www.energytrust.org/bsug or e-mail earlljohnson@comcast.net

Registration Deadline: Monday, April 14, 2008

- The Oregon Department of Energy provides ongoing technical input to members and organization support
- Bonneville Power Administration, the Cascadia Chapter of USGBC and the Northwest Energy Efficiency Alliance offer outreach support
- The Oregon chapter of the American Society of Heating, Refrigeration and Air-conditioning Engineers certifies the sessions for professional development hours and provides outreach support.

BSUG welcomes new members. Engineers, architects, energy analysts and contractors interested in the group may visit the Web site, www.energytrust.org/bsug, to find out about upcoming meetings or to register as a member of the dues-free group. For further information, e-mail Earl Johnson at earlljohnson@comcast.net

In addition to Earl Johnson, founding members of BSUG include Mike Hatten, Solarc; Mike Rosenberg, Oregon Department of Energy; Brian Thornton, now with Energy Trust's solar programs; and Tom White, Glumac. BSUG was formed in early 2006. The first meeting drew 32 participants, and the organization now has almost 170 members.

-- Tim Steele (503) 230-3303
(Submitted by Earl L. Johnson, P.E.)



Columbia River PUD Helps School Districts

St. Helens, OR - Columbia River PUD provided a grant in March of \$4,250 through its Community Involvement program to Scappoose School District to help pay the extra costs of hosting students from Vernonia School District after flooding destroyed Vernonia's school buildings in December of 2007.

About 300 Vernonia sixth through 12th graders attended school at Scappoose High School from December 11 through January 31. Administrators, teachers and students at the high school made changes to their schedules and class locations to make room for Vernonia students until modular classrooms could be constructed in Vernonia.

According to Scappoose Superintendent Paul Peterson, while most of the costs of housing the

Vernonia students have been covered, the District incurred increased utility expenses while hosting the students including water and sewer, electricity, natural gas and telecommunications. The PUD's grant will be used to pay those expenses.

Sue Hays, Principal at Scappoose High School, thanked the PUD for its contribution. "Thank you for your support of Vernonia and your willingness to help us out in our time of need," said Hays.

Columbia River People's Utility District provides electric service to 18,420 customers in Columbia and Multnomah Counties in Oregon.

-- Submitted by Libby Calnon, Communications Specialist, Columbia River PUD

BPA Sponsors 2008 West Coast Energy Management Congress

BPA has signed on as a Silver Sponsor for the 2008 West Coast Energy Management Congress presented by the Association of Energy Engineers.

This trade show will be held at the Washington State Convention and Trade Center in Seattle on May 14 - 15. Seminars and vendors will describe technologies related to greenhouse gas accounting, accessing building energy performance, green buildings, technologies for high-performance buildings, strategic-planning and energy management, and renewable energy.

BPA will have a booth in the trade show section featuring information on a variety of commercial energy efficiency initiatives including the new

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Sue Hays, Scappoose High School Principal, helps load a truck with food and supplies for Vernonia.

Final reports

The Pacific Northwest National Laboratory Web site offers final reports on two demonstration projects - the Olympic Peninsula Project, and the Grid Friendly™ Appliance Project. The studies tested demand-response concepts and technologies and how well they work in practice.

<http://gridwise.pnl.gov/>.

Recycling Lamps that Contain Mercury

The following information is adapted from the Environmental Protection Agency's (EPA) Web site. For more complete information on lamp and other recycling opportunities, visit the EPA Web site at <http://www.epa.gov/epaoswer/hazwaste/id/univwast/lamps/recycle.htm>.

EPA's mercury lamp recycling outreach program is designed to promote the recycling of mercury-containing lamps through increased awareness of proper disposal methods in compliance with federal and state universal waste rules.

Residential CFL Recycling Options

New services are available that make CFL disposal and recycling for the consumers as easy as a trip to the mailbox. At least two new companies are offering pre-paid recycling packages that can be shipped to a consumer or a commercial site. Lamps can be placed in the shipped container and mailed back to the company using the pre-paid mailing labels and they will recycle the products accordingly. The containers are typically boxes or buckets, and come in various sizes to hold small or large quantities of fluorescent lamps.

Veolia Corporation is one of the companies offering such pre-paid CFL recycling services. The information regarding their services can be found at www.prepaidrecycling.com. Another company offering CFL recycling is Air Cycle Corporation. Air Cycle information can be found at www.lamprecycling.com. Air Cycle also offers a BulbEater® product that can be used on a job site to crush linear fluorescent lamps. This product claims to capture 99.99 percent of the hazardous vapors released from the crushing, and converts the lamp into 100 percent recyclable material.



Commercial and Industrial Recycling Options

Steps to a commercial or industrial facility mercury lamp recycling program include:

- Select a Recycler - Lamprecycle.org, sponsored by the National Electrical Manufacturers Association (NEMA), maintains a list of companies claiming to recycle or handle spent mercury-containing lamps. Also provided below are general criteria to consider when selecting a recycler.
- Recycler Selection Criteria - Select a recycling contractor that will best serve the facility's needs while at the same time giving the assurance that waste lamps are properly managed to minimize company liability.

Criteria for selecting a recycler:

- Pricing - Pricing represents the recycler's ability to service the facility's needs, while at the same time being price competitive. Question pricing and get more than one quote for services.
- Service - Consider responsiveness, timeliness, program flexibility and customization, the personnel assigned to the work, whether there will be intermediaries, the capabilities of the firm and the equipment they will use.
- Risk Management - Recyclers are obligated to reduce or eliminate pollution risks for their clients. In order to remove the mercury from the waste, recyclers must comply with numerous federal and state regulations.

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The BPA Energy Efficiency newsletter is published quarterly on or about the first day of the months of January, April, July, and October. Send contributions to Jean Oates, KLJB-1, Bonneville Power Administration, P.O. Box 3621, Portland, OR 97208, or e-mail your ideas/articles/photos to eenewsletter@bpa.gov.



Innovative Commercial HVAC: APEM Forum in McMinnville

The Oregon Association of Professional Energy Managers (Oregon APEM) 2008 Spring Forum "Innovative Commercial HVAC" is scheduled for Thursday of Earth Week, April 24, 2008 from 8:30 a.m. – 2 p.m., with registration starting at 8 a.m. The event location is:

McMinnville Water Reclamation Facility, 3500 NE Clearwater Dr., McMinnville, OR 97128

Speakers include:

- Bill Goerlich, McKinstry, who has over 30 years of experience in innovative commercial HVAC, who will speak on the history of what has worked and what hasn't
- Tom Sorrenson, Heat Relief, and Jim Benville, Mitsubishi, who will discuss mini-split heat pumps and a system installed for Cascade Energy Engineering's new office in NE Portland
- Todd Amundson, BPA; Fred Shaub, Environmental and Engineering Services; and Ernie Straum, Water Reclamation Facility Operations Manager. These individuals will speak about converting packaged electric heat and cooling to an effluent source heat pump at the City of McMinnville Water Reclamation Facility.

This year's theme for Oregon APEM is "Energy Management for the 21st Century." Please join Oregon APEM for some excellent presentations and great networking. Register online at <https://www.regonline.com/builder/site/Default.aspx?eventid=604909>

Contact David Christie at (503) 435-3115 or via e-mail to djc@mc-power.com for more information.

Principles of Demand-Side Management


In February, four BPA Energy Efficiency employees attended the Association of Energy Services Professionals (AESP) training at the Avalon Hotel in Portland, Ore. Ray Hartwell, Pamela Sporborg, Mark Ralston and Lloyd Meyer learned the "Principles of Demand-Side Management" at a week-long training attended by over 50 people. Attendees came from as far away as British Columbia (BC Hydro) and Korea (Korea Electric Power Corporation).

The training touched on each stage of program operations, from planning and market research to implementation, verification, and evaluation. Workshop attendees broke into smaller groups to apply the principles learned to a practical example.

"I especially enjoyed the break-out sessions," said Pam Sporborg. "It gave me an opportunity to be creative, as well as get to know some of the other attendees."

Mira Vowles, a BPA Energy Efficiency Engineer, organized the training.

-- Pam Sporborg (503) 230-3170



**DISCOVER
THE POWER OF AESP**

The Association of Energy Services Professionals is a non-profit, professional development association that provides educational opportunities for energy professionals working in the energy efficiency and climate change sector.

- Topic Committees
- Local Chapters
- Three Conferences Each Year
- Educational Webinars
- Member Database, Supplier Directory and ListServ

www.aesp.org

**AESP's
CASCADE CHAPTER INFO:
Future of Energy!**

- Monthly Networking Meetings (4th Wednesday at Kell's)
- Green Collar Career Fair Planned for Spring
- City Council Candidate Energy Debate for Fall

www.futureofenergypdx.org



Seventh Annual Alternative Energy Expo and Electrathon

Last year over 800 students attended the event to learn about alternative energy and earth friendly activities. The 2008 event offers hands-on activities and excitement surrounding renewable energy.

Columbia Basin College Campus
2600 N 20th Street, Pasco, WA

Friday, April 25, 9:30 a.m. to 4 p.m.

Saturday, April 26, 10 a.m. to 4 p.m.

Besides a long list of exhibits and speakers, the event will feature an Electrathon endurance race; high school and open class entrants race around a track in home-made electric cars to see who can, in one hour, get the most laps out of a 67-pound battery.

Please see the event flyers and vendor application for more information: http://www.bpa.gov/Energy/N/reports/newsletter/April2008/Electrathon_Flyer.pdf.

To volunteer to help at the event, contact Darroll Clark at (509) 546-5944, or Todd Blackman at (509) 546-5946.

View information about this and other Mid-Columbia Earth Month events and activities at: <http://www.earthmonthmc.org>

Presented by Columbia Basin College, Energy Northwest and Franklin PUD

BPA Sponsors West Coast Congress

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Northwest Trade Ally Network – Commercial & Industrial Lighting. Other prominent organizations include Puget Sound Energy, Seattle City Light and Snohomish PUD.

-- Lisa Perigo (503) 230-3059
(Submitted by Brent Barclay)



Steam Systems Assessment Training

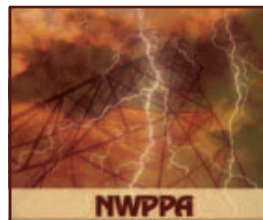
April 28

**Puget Sound Energy
East Building - 355 10th Ave NE
Bellevue, Washington**

Save money and increase reliability at your plant by implementing the information and tools presented in this course!

Course Overview: Operation of typical steam systems, methods of system efficiency improvement, effective resource utilization and system loss reduction.

http://www.energy.wsu.edu/documents/training/SteamSystems_20080428_RegForm.pdf



Northwest Public Power Association 2007-2008 Education & Conference Schedule

http://www.nwppa.org/html/web/2007-08_NWPPA_Education_Schedule.pdf

Heat Pump Sizing: April 22, Richland, Wash.

Marketing Section Meeting: April 23, Richland, Wash

Residential Energy Auditor/Inspector Certification: May 5-9, Spokane, Wash.

Commercial Building Audits: June 18-19, Spokane, Wash.



Lamp Recycling

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Factors for evaluating recyclers include:

- Whether they meet insurance requirements for general and pollution liability
- The financial health of the company
- What indemnities or other assurances they offer clients
- Their environmental record and compliance history
- The existence of government permits and approvals for facility operation or transportation
- Operations and safety procedures and records
- Vapor control technology and monitoring records
- Hygiene and medical surveillance information
- The status of a facility closure plan
- Facility audit reports
- The availability of key regulatory contacts

Facility managers are encouraged to ask potential recycling contractors about any of these items, such as asking for references or checking with the state agency that regulates recycling facilities for compliance histories.

Alternatives to Recyclers:

- Contact a lamp distributor to see if they offer a recycling service for their customers. Many distributors now offer this convenient "one-stop shopping" service to their customers. If not, contact a licensed hazardous waste transporter or contract with a company. Make sure the contractor is in compliance with federal and state requirements.
- Contract waste lamp management to a cleaning company or electrical contractor; be sure that they are in compliance with federal and state regulations. The

commercial or industrial facility will be liable if the subcontractor improperly disposes of waste lamps.

-- Craig Ciranny (503) 230-5865

Fall Change-A-Light Twist Promotion

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logos and educational information about the benefits of ENERGY STAR CFLs.

A team of 12 promotional merchandising representatives made more than 2,900 store visits. They verified product, maintained product displays, ensured promotional materials were properly displayed and reported retailer specific information and requests.

Feedback from participating retailers and utilities has been very positive.

Terry Zimmerman, electrical buyer for Fred Meyer, said, "The time between Christmas and the end of February is ideal for selling CFLs. We look forward to building on the success of the fall promotion, which was by far the most successful CFL promotion we have ever had."

In 2007, WinCo Foods only stocked one other CFL SKU when they were not participating in the buy-down promotions. Nancy Lebold, VP General Merchandise Procurement for WinCo Foods, said, "Due to the positive response to the Change A Light program and increased customer demand for CFLs because of the program, at the first of this year we completely revamped our lighting category and have added a full 12-SKU section of CFLs to our stores."

Many utilities ran additional advertisements or bill inserts to educate their customers about the Change-A-Light promotion. Avista Utilities recognized increased sales of CFLs over the past year. "We anticipate the number of promotional CFLs sold this year at participating retail locations

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Why Must Heat Pump Installations Meet PTCS Specifications?

Heat pumps in general, and Performance Tested Comfort Systems™ (PTCS) specifically, have generated a lot of discussion between BPA and its customers over the past couple of years. One question raised is, "Why did the Regional Technical Forum (RTF) recommend and BPA adopt the requirement that heat pump installations meet the PTCS specifications?"

Tom Eckman, Manager of Conservation Resources at the Northwest Power and Conservation Council (Council) recently answered that question. His response follows:

I'll try to distill several years of activities into a more concise record of events.

Prior to BPA's implementation of the CR&D program back in 2001, BPA asked the Council to direct the RTF (which is a Council advisory committee) to develop a comprehensive list of conservation measures. Since C&RD was designed to "re-start" regional conservation efforts, rather than "acquire cost-effective savings" BPA did not require that measures included in that program meet a cost-effectiveness test. Consequently, when the RTF developed its list of conservation measures, it included the conversion of existing homes with electric forced air furnaces or baseboard heating system to heat pumps as well as heat pump efficiency upgrades on the list of eligible measures. The RTF also developed its first set of "heat pump installation specifications" that were to be followed for heat pump installations in order to be claimed under C&RD. These specifications, which were based on Umatilla Electric Co-operative's program requirements, did not require that a home's duct system be tested for leakage and sealed, nor did it require that the heat pump's air flow and refrigerant charge be verified.

When the RTF adopted its initial set of heat pump installation requirements many of the members were concerned that there was evidence from prior regional evaluations

(BPA's Residential Standards Demonstration Project (RSDP) and Residential Construction Demonstration Program (RCDP)) that heat pump performance did not match engineering expectations. In RSDP, for example, homes with heat pump systems appeared to only achieve an annual coefficient of performance (COP) of between 1.4 and 1.8, rather than the expected 2.0. In addition, research done in other regions (Florida and California) appeared to show that heat pump and central air conditioning refrigerant charges in many installation (over 50 percent) were not at "manufacturer's specifications. As a result of these concerns, the RTF initiated a regional evaluation of heat pump savings and performance. After the RTF developed a detailed scope of work, BPA, the Northwest Energy Efficiency Alliance (NEEA), the Energy Trust of Oregon (Trust), Idaho Power and the RTF cosponsored the actual evaluation.

This study was designed to determine whether the RTF's

initial
estimates for
"deemed"
savings
from the



conversion of existing homes with electric forced air furnaces or baseboard heating system to heat pumps were realized and to assess whether heat pump performance was being adversely impacted by poor installation practices and/or leaky duct systems. The study compared the pre and post-conversion billing records for over 1,000 homes claimed under C&RD. It also tested an additional 225 homes with heat pumps to determine whether these systems had proper refrigerant charge, air handler flow rates, and to determine duct leakage rates. Finally, we also hired Purdue University to test the impact of improper charge and air flow on heat pump heating performance (prior testing was done on air conditioning performance).

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Why Must Heat Pump Installations Meet PTCS Specifications?

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After reviewing the results of the billing analysis, the data obtained from field audits of 225 heat pump systems and the laboratory research at Purdue, the RTF concluded three things. First, that our original estimates of the savings from converting homes heated with forced air furnaces or baseboard systems were not being achieved. Second, that the primary reasons the heat pumps installed in C&RD were not performing as well as expected was that they were not being installed properly and/or they had leaky duct systems. Many heat pumps had inadequate air flow across their inside coil (almost 25 percent had less than 300 cfm/ton). Installers were employing control strategies, such as locking out the compressor at 40 degrees F, that negatively impacted efficiency. The average duct leakage rate for homes converted to heat pumps was almost 13 percent compared to the current PTCS specification of 6 percent. Finally, the RTF concluded that in order to achieve the expected savings from heat pumps, its basic installation specifications needed to be revised. The RTF then spent several months developing a revised set of heat pump installation specifications and quality assurance requirements. These became the PTCS specifications.

At about the time that the RTF completed its development of the PTCS heat pump installation specifications, BPA transitioned from the infrastructure building goals of the C&RD program to the resource acquisition goals of the Conservation Rate Credit (CRC) and Conservation Acquisition Agreement (CAA) programs. As a result of a change in goals, BPA wanted and needed more assurance that it was spending ratepayer money to acquire savings to offset the need to buy more expensive resources. BPA also stated clearly that it intended to meet its conservation acquisition goals at the lowest cost to BPA. Consequently, BPA changed the basis on which it determined what it was willing to pay for conservation savings from "the value of the energy saved" to "the portion of the cost needed to acquire the energy savings." Thus, rather than paying roughly \$0.40/kilowatt-hour saved in

C&RD, BPA offered to pay roughly 50 percent of the cost of heat pump measures.

Also at this time two other factors changed. The RTF analysis of the incremental savings from installing a high efficiency heat pump were updated to reflect the fact that new minimum federal standards for heat pump efficiency were imposed. The imposition of these new standards reduced that proportion of the savings attributable to installing a higher efficiency heat pump compared to the amount of the savings that are produced by reducing the duct leakage in the home. Over two-thirds of the savings now come from reducing duct leakage compared to upgrading the heat pump HSPF rating. In addition, BPA determined that while it might be "cost-effective" to pay for the conversion of homes with forced-air furnaces to heat pumps, most of the homes that were being converted were doing so without utility incentives. Therefore, in order to use its conservation budget most effectively (i.e., not pay for something that was going to happen anyway) BPA decided that in its CRC and CAA programs it would only offer to pay for the cost of upgrading the efficiency of the heat pump and its installation, rather than the full cost of conversion. The combined effect of these two changes resulted in a significant reduction in BPA credit for heat pump installations at the same time the more rigorous PTCS specifications were being imposed to provide greater assurance of the savings from this measure.

My apologies for the long history of how and why the current requirements and BPA willingness to pay levels for heat pumps evolved. The bottom line is that the PTCS requirements exist because the RTF's research discovered that the heat pump installation practices in the region were not producing reliable savings. BPA's decision to restrict its willingness to pay for upgrades and not conversions was made assure that its conservation acquisition dollars are allocated to produce the savings

-- Tom Eckman, February 6, 2008

Unique Lighting Technology used at Bonneville Dam

Since its creation in 1937, BPA has had close ties to the Bonneville Dam, from which it received its name and its first source of electricity. More than 70 years later, BPA still works closely with the Army Corps of Engineers (Corps), the owner and operator of the dam, to operate and maintain the dam for the public good.

Bonneville Dam is not only one of the largest dams in the Pacific Northwest, but also one of the most popular to visit. The Bonneville Lock and Dam Visitor Complex is one the largest public viewing facilities owned by the Corps, nationwide. The complex includes several recreational areas and informational visitor centers.

On the north side of the Columbia is the Washington Shore Visitor Complex, the site of a recently completed BPA Federal Agency Energy Efficiency Program project. In cooperation with the Corps, BPA completed a retrofit of the lighting inside the Washington complex.

While this project did include basic T-12 to T-8 fluorescent lighting retrofits, it also incorporated two additional cutting edge technologies - induction and cold cathode lighting. Old mercury vapor lighting in the lobby was replaced with induction lighting because it provided better lighting quality and longer life. BPA Project

Manager Tom Osborn noted that it was extremely difficult to change lights over the escalator in the visitor center. Induction lighting, which should last more than 100,000 hours, was an excellent choice for this part of the visitor center.

In addition to the lighting retrofit in the public areas of the visitor center, BPA also replaced mercury vapor lighting for the center's catwalks. Here, BPA replaced the 75-watt mercury vapor lamps with 8-watt cold cathode lighting.

These lighting retrofits, in addition to the reduction of lighting and installation of occupancy sensors

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Above: The visitor's center at Bonneville Dam has many educational features.

Left: The lobby at the Bonneville Dam Visitor Complex is a brighter place, with new fluorescent lighting.

Below: New cold cathode lamp. The "second" lamp is a reflection, and not an actual lamp.



Unique Lighting

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in the display gallery, brought the cost of the installation to approximately \$25,000. Overall, the project will save an estimated 117,000 kWh per year.

The Washington Shore Visitor Complex lighting project is an example of BPA commitment to its successful Energy Efficiency partnership with the Corps, to regional energy efficiency and to the Bonneville Dam. In the past seven years, BPA has completed 60 energy efficiency projects at Federal Columbia River Power System dams and powerhouses. Over 4.0 aMW of energy savings has been produced through those projects, at the low a cost to BPA ratepayers of only \$2.1 million.

-- Tom Osborn (509) 527-6211

(Article submitted by Frank Brown, Kate Patton and Tom Osborn)

Coeur d'Alene Tree Nursery Enjoys Energy Savings

Refrigeration systems are essential to growing tree seedlings in a precisely controlled manner, so that exactly the right seedlings are ready for use at exactly the right time.

Two years after the installation and commissioning of a new chiller and lighting system, the U.S. Forest Service, Northern Region, based in Coeur d'Alene, Idaho, Regional Tree Nursery enjoys an 80 percent reduction in electric energy use. The project opportunity was brought to BPA's attention by Kootenai Electric Cooperative, and the remarkable energy reduction was achieved with the help of the BPA Federal Agency Energy Efficiency Program.

- In 2001, the Nursery's inefficient 1962-vintage refrigeration systems began to fail, and the Forest Service could only provide capital funds to make emergency repairs.
- In 2002, the Forest Service Regional Office contacted BPA to seek help in addressing the refrigeration system failures.

- BPA provided engineering support to identify and define energy efficiency opportunities. BPA then arranged \$1.6 million of private sector third party financing for the recommended project.
- BPA also helped implement some of the measures, using BPA contractors.

The Forest Service chose to pursue: (1) completely replacing the refrigeration system and (2) retrofitting lighting throughout the Nursery. The inefficient Freon™-based refrigeration system, which served almost 21,000 square feet of refrigerated space, was replaced by an efficient chiller system that included screw compressors with variable frequency drives. The old evaporators and fans were replaced with more efficient evaporators, and warm "waste" water produced by the system's condenser was used to defrost the evaporator coils. The entire system is computer-controlled. For lighting, BPA and the Forest Service proposed replacement of all existing ballasts and lamps with more efficient models.

The projects, however, cost more than \$2.3 million. BPA only provided a \$250,000 incentive for the project savings, but arranged a third party financing transaction for \$1.6 million. Because BPA took quick action to arrange the financing, at a moment when the Forest Service had some appropriated funds to use for the remaining project costs, the project was implemented.



After project completion, the Forest Service hired an independent measurement and verification contractor.

- Metered savings were found to be more than 80 percent of the original Tree Nursery electric energy consumption.

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Coeur d'Alene Tree Nursery

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- Continued review of utility bills indicates that those savings are being sustained.

The Forest Service is not only enjoying those operating cost savings, but the new system requires much less maintenance, provides better quality seedling management, and the lighting improvements have produced a higher quality, more productive, and safer work environment. Staff time that had been spent on refrigeration system maintenance has been deployed to new productive assignments. Total savings exceeded 2,100,000 kWh per year, reducing the Forest Service power bill by about \$100,000 per year.

The Regional Tree Nursery project is one of the most successful financed projects implemented by the BPA Federal Agency Energy Efficiency Program. Forest Service Regions across the nation have learned from the Coeur d'Alene project, and applied some of the lessons learned to their tree nurseries, producing energy savings benefits.

BPA and the Forest Service thank Kootenai Electric Cooperative for finding the project opportunity. This success grew from the cooperation and support of the co-op.

-- Frank Brown (206) 220-6774

(Article submitted by Frank Brown and Kate Patton, BPA and Jane Kipp, Northern Region, U.S. Forest Service)

Ask your Energy Efficiency Representative about . . .

ENERGY™
SMART DESIGN

Fall Change-A-Light

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will double and Change-A-Light is a great example of a program that gets effective energy efficiency results," said Camille Martin, Avista Utilities.

Jill Reynolds, program specialist with Ecos Consulting, said, "The program's success proved there is still a tremendous opportunity for consumer outreach. The Fall Change-A-Light program did a fantastic job of making CFLs extremely affordable and convenient for consumers to purchase."

-- Lisa Perigo (503) 230-3059

(Submitted by Megan McCabe, Program Coordinator, Fluid Market Strategies)



April 22, 1970-2008



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Teri Duncan New Energy Efficiency Program Marketing Manager



Teri Duncan joined BPA's Energy Efficiency group in February as the new Program Marketing Manager,

Teri Duncan joined BPA's Energy Efficiency group in February as the new Program Marketing Manager, filling in behind Tom Foeller, who retired.

Duncan has a strong marketing background. She was a senior residential program manager at Portland-based PECI immediately prior to coming to BPA. Other related positions she has held include marketing at The Oregonian newspaper, public affairs producer at KOIN-TV and founder of Stash Tea Mail Order.

Working at PECI gave Duncan a head start in the knowledge of energy efficiency technology and successful marketing of concepts and products. Being familiar with the services and initiatives of BPA and its customers allows Duncan to focus

on how marketing can be tailored to best suit BPA Energy Efficiency and to learn the ropes of a federal bureaucracy.

"I hope to help create a top-notch marketing organization to promote and implement conservation programs throughout the Northwest," said Duncan. "I feel lucky to join such a talented group of folks who are so passionate about energy efficiency."

It takes time to design a successful marketing program, especially when dealing with the government constraints BPA works under. Although challenging to develop, effective marketing practices will come soon and will be geared to help both BPA and its customers.

Welcome to BPA, Teri Duncan.

-- Jean Oates (503) 230-5861

John Friederichs Utility Manager for Ferry County PUD

As of March 2008, John Friederichs, former conservation manager at Ferry County PUD, took the helm as utility manager from Bobbi Weller, former manager, who retired. In his years working in energy efficiency, John has an exemplary list of conservation achievements. Oftentimes, Ferry County PUD leads the region in being the first to implement several of BPA's programs including a massive county wide CFL campaign in the late 90's and most recently, being the first to sign up for and receive store energy audits under Energy Smart Grocer. BPA will have a good advocate in John as he continues to promote energy efficiency and renewables as Ferry County PUD's newest manager.

-- Rosalie Nourse (509) 625-1368

Regional energy efficiency staff changes occur often. BPA invites its customer utilities and other regional energy entities to submit key events as they occur for people active in and known to the Northwest energy efficiency community. Please send milestones to: eenewsletter@bpa.gov. (BPA reserves the right to determine if events are suitable for posting.)

Northwest Energy Efficiency Community MILESTONES

Friederichs, John	Former Conservation Manager, Ferry Co. PUD, Republic, Wash., new Utility Manager
Hadley, Adam	BPA, Portland. Left BPA to pursue other interests.
Harman, Virginia	Glacier Electric Co-op, Cut Bank, Mont., New Manager of Communications and Conservation Services as of January 31.
Noland, Joe	New Conservation Director at Cheney Light Department, Cheney, Wash.
Nollkamper, Roy	Glacier Electric Co-op, Cut Bank, Mont., Manager of Member Services, Retired February 29 with 34 years of service to the Co-op.
Volk, Alicia	BPA, Portland. New Contract Administration Administrative Assistant
Welker, Jillianne	BPA, Portland. New to BPA Energy Efficiency Programs
Weller, Bobbi	Ferry County PUD, Republic, Wash., Manager, retired
Wilson, Boyd	BPA, Walla Walla. New Energy Efficiency Representative



Fishing at Bonneville Dam.
BPA file photo.

2008 Energy Efficiency Utility Workshop



Photos by Brad Miller, BPA

Note from Workshop Lead Becky Clark

Thank you, attendees and participants, for making the 2008 Utility Energy Efficiency Workshop a success. In late 2007, I attended a Utility Sounding Board (USB) brainstorming session where they offered speaker names, format, invitee list, panel topics, dates, themes and everything else connected with a regional meeting. Working with the USB to finalize the event was a pleasure.

A total of 220 registered for the workshop, most attending both days. A list of contact information will be provided to each workshop participant and vendor. Judging from parting comments and evaluation sheets, most attendees found the workshop valuable and well worth the time. Networking opportunities received the highest rating, and the DoubleTree Hotel earned kudos for service, food and its green hotel rating. Stakeholders especially appreciated this time to meet with utility staff.

Most of the PowerPoint presentations from workshop sessions should be posted on the BPA external Web site by early April: http://www.bpa.gov/Energy/N/Utilities_Sharing_EE/. Jerry Bingold's presentation is not available for posting, but he can be reached by phone and via e-mail.

We received more than 40 workshop evaluation forms. Most ratings in response to the questions or statements on the forms were in the top two categories. With those two ratings combined, the following results were obtained.

- Did the marathon format meet your needs? 73 percent
- Did informal roundtables provide useful information? 74 percent
- Was the use of PowerPoint effective? 74 percent
- Did you have enough networking time? 73 percent
- What is the overall value of the workshop? 78 percent
- Did the vendor reception provide useful business contacts? 46 percent



"It is always great to meet with peers and learn about their programs."





"The workshop gave me a broader scope of what is ahead in the future of EE measures."











"Knowledgeable speakers
and networking"



2008 Energy Efficiency Utility Workshop, continued



2008 Energy Efficiency Utility Workshop, continued



"It was very good to hear from customers such as DoubleTree and Plum Creek Timber, as well as Cascade Energy Engineering. Jan Brown, Yellowstone Business Partnership, was an awesome speaker!"





There are "Indications that carbon impacts may begin to be more effectively incorporated into cost-effectiveness evaluation."

